

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TENNESSEE
EASTERN DIVISION**

UNITED STATES OF AMERICA,)	
)	
v.)	No. 1:07-cr-10074-JPM-tmp
)	
LORNE ALLAN SEMRAU,)	
)	
Defendant.)	

**NOTICE OF FILING OF AFFIDAVIT OF MARK STORK GEORGE, M.D.
IN SUPPORT OF
DEFENDANT'S OPPOSITION AND MEMORANDUM IN SUPPORT OF OPPOSITION
TO UNITED STATES' MOTION IN LIMINE TO EXCLUDE DEFENDANT'S EXPERT
WITNESS TESTIMONY OF DR. STEVEN LAKEN AND REQUEST BY THE UNITED
STATES FOR A *DAUBERT* HEARING**

COMES NOW, the Defendant Lorne Allan Semrau, by and through counsel of record, and gives notice of the filing of the affidavit of Mark Stork George, M.D. in support of his Opposition and Memorandum in Support of Opposition to United States' Motion in Limine to Exclude Defendant's Expert Witness Testimony of Dr. Steven Laken and Request by the United States for a *Daubert* Hearing.

RESPECTFULLY SUBMITTED March 22, 2010.

LAW OFFICES OF J. HOUSTON GORDON

BY: s/J. Houston Gordon

J. HOUSTON GORDON
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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on March 22, 2010 a true and correct copy of the foregoing document was forwarded by electronic means *via* the Court's electronic filing system to:

Acting United States Attorney Laurence Laurenzi (#009529)
Assistant United States Attorney Stuart J. Canale (#012590)
United States Department of Justice
167 N. Main Street, Suite 800
Memphis, TN 38103

s/J. Houston Gordon

AFFIDAVIT OF MARK STORK GEORGE, M.D

STATE OF SOUTH CAROLINA

COUNTY OF CHARLESTON

I, MARK S. GEORGE, after being duly sworn, do state as follows:

1. My name is Mark Stork George. I am the Director of the Brain Stimulation Laboratory at Medical University of South Carolina (MUSC) in Charleston, South Carolina, Director of ^{the} Specialty Division, MUSC Psychiatry Department, University Distinguished Professor, Departments of Psychiatry, Radiology and Neurology at MUSC, Adjunct Professor of Psychology, College of Liberal Arts at the University of South Carolina, Statewide Co-director and MUSC Director, SC Statewide Brain Imaging Center of Excellence (BICOEE) and Staff Psychiatrist and Director, Psychiatric Neuroimaging, Ralph H. Johnson VA Medical Center, Charleston, SC.
2. I am board certified by the American board of Psychiatry and Neurology for Neurology and Psychiatry.
3. I have extensive experience in these fields and, particularly, the developing technologies in these fields as their usage expands.
4. I have developed and used the technology of functional imaging to discover that specific brain regions change activity during normal emotion.

5. In 1995, I built the functional neuroimaging division and brain stimulation laboratories at MUSC, which has grown into the MUSC Center for Advanced Imaging Research, now part of the SC Brain Imaging Center of Excellence.
6. I pioneered treatments for resistant depression, which were FDA approved in 2006, ^{8 msk} and used MRI imaging to understand some of the effects.
7. I am a world expert in brain stimulation, depression, and am the editor-in-chief of a new journal I have launched with Elsevier in 2008, *Brain Stimulation: Basic, Translation and Clinical Research in Neuromodulation*.
8. I sit on several editorial review boards and NIH study sections, have published over 300 scientific articles or book chapters, have eight patents, and have written or edited 6 books. Further details of my work can be found in my current curriculum vitae, hereto attached as Exhibit A.
9. I developed the underlying methods and procedures used in fMRI testing for truth verification. These methods have now been widely adopted by the neuroscience community, including using this technology for disease prediction.
10. I have volunteered to submit this affidavit without cost. I am financially independent of Cephas Corp. and will not gain monetarily by the development of fMRI technology for truth verification. I volunteered to submit this affidavit because I believe that fMRI technology for truth verification is a credible, reliable and valuable scientific contribution.

MUSC holds a portion of the Cephas patent portfolio. As an MUSC investigator on this patent, I would get 5% of the MUSC royalty, which is only nominal to begin with.

11. As part of my expertise, I am intricately familiar with the field of fMRI testing and analysis. I base all of the following opinions and observations on my education, experience, knowledge, specialized skill and expertise.
12. I have conducted tests, reviewed data, and analyzed the research to produce a conclusion that fMRI testing for purposes of truth detection is reliable, repeatable, testable, the error rates are quantifiable, and the technology has been peer reviewed and published.
13. It is my opinion that the general principles and theories of fMRI testing for purposes of truth detection are reliable and valid, and that the testing produces reliable and repeatable results.
14. It is my opinion that the theory, method and procedures underlying the findings in fMRI testing for truth verification are scientifically sound, have been confirmed in controlled laboratory setting and are credible.
15. It is my opinion that the methodology fMRI testing for truth detection has been tested and is capable of being retested.
16. The fMRI technology is capable of being tested because the procedure is repeatable and the results can be validated, at least in the clinical setting. Any number of subjects can be submitted to precisely the same technology, and results analyzed by a single computer algorithm.
17. The fMRI questions are presented to the subject on a computer screen and not by a human interviewer, in random order. They are then interpreted by a computer algorithm without human interpretation of the results. For quality control

purposes, the results are then checked by a qualified, educated, and trained specialist.


18. Since the results are interpreted by a computer, the fMRI is not susceptible to confirmation bias. The computer programs used in fMRI testing for truth verification are well-tested. A well-tested computer program will interpret results more reliably than a single human practitioner.
19. The fMRI testing for purposes of truth detection measures which brain regions the subject uses to answer a question. This highly scientific process of identification has been rigorously tested time and time again, independent of any type of litigation, strictly within the constructs of science.
20. The fMRI testing for truth verification has been subjected to peer review and publication, published in scholarly journals in more than twenty instances, with a dramatic increase in publication since 2006 as the technology continues to evolve, improve, and be reviewed.
21. The science that underlies fMRI testing for truth verification has been subjected to rigorous peer-evaluation by the larger scientific community, which occurs post-publication and is ongoing.
22. Multiple fMRI studies have produced quantifiable error rates for determining whether a subject was telling the truth or lying. The computerization component of fMRI testing allows standardization to occur, including the presentation of questions, the speed at which they are administered, and the timing of the fMRI

imaging which can all be consistently administered, monitored, and analyzed by computer.

23. This fMRI technology is used extensively at the highest levels of various medical research fields, and like DNA evidence, has multiple aspects of application and use. Similarly, like the extensive publications on DNA matching, and the procedures underlying DNA matching, fMRI testing for truth verification has been exposed to the public through submission of underlying data and fMRI testing for truth verification results have been published and critiqued in peer-reviewed articles.


Further, your Affiant saith not.

DATED this 22 day of March, 2010.



MARK S. GEORGE, M.D.

SWORN TO AND SUBSCRIBED BEFORE ME this 22 day of March, 2010.



NOTARY PUBLIC

My Commission Expires:

July 14, 2015